

WHAT IS CLAIMED IS:

1 1. A method of updating a locally stored version of a data set, wherein multiple
2 application systems each maintain a separate stored version of the data set and are each
3 capable of modifying an attribute of the data set, wherein the attribute comprises multiple
4 attribute components that are each associated with a different one of the multiple application
5 systems, and wherein each attribute component has a data value and a change value, the
6 method comprising:

7 receiving, from a first application system of the multiple application systems and at a
8 second application system of the multiple application systems, a message containing a data
9 set as locally stored in the first application system; and

10 for each attribute component of the received data set, comparing the attribute
11 component's change value as stored locally in the second application system with the
12 attribute component's change value as contained in the received data set, and if the
13 comparison indicates that the version of the attribute component's data value as stored
14 locally in the second application system is less recent than the version of the attribute
15 component's data value contained in the received data set, replacing the attribute
16 component's data value stored locally in the second application system with the attribute
17 component's data value contained in the received data set.

1 2. The method of claim 1 wherein the change value of the attribute component is
2 a timestamp that indicates the time of the modification to the attribute component's data
3 value.

1 3. The method of claim 1 wherein the change value of the attribute component is
2 a version number that is incremented after each modification to the attribute component's
3 data value.

1 4. The method of claim 1 wherein the first application system sends messages to
2 the second application system after each modification of the first application system's data
3 set.

1 5. The method of claim 4 wherein the first application system uses asynchronous
2 message transfer to send the messages to the second application system.

1 6. The method of claim 1 wherein the message further comprises a total value
2 that represents a sum of the attribute component data values in the data set as locally stored
3 in the first application system.

1 7. The method of claim 1 wherein the message received by the second
2 application system from the first application system includes the attribute components
3 associated with the second application system.

1 8. A method of updating a locally stored version of a data set, wherein multiple
2 application systems each maintain a separate stored version of the data set and are each
3 capable of modifying an attribute of the data set, wherein the attribute comprises multiple
4 attribute components that are each associated with a different one of the multiple application
5 systems, and wherein each attribute component has a data value and a change value, the
6 method comprising:

7 modifying an attribute of a data set stored locally in a first application system;

8 generating a message containing the modified data set as locally stored in the first
9 application system, the data set comprising multiple attribute components that are each
10 associated with a different one of the multiple application systems; and
11 sending the message to a second application system that maintains a version of the
12 data set.

1 9. The method of claim 8 wherein the change value of the attribute component is
2 a timestamp that indicates the time of the modification to the attribute component's data
3 value.

1 10. The method of claim 8 wherein the change value of the attribute component is
2 a version number that is incremented after each modification to the attribute component's
3 data value.

1 11. The method of claim 8 wherein the first application system uses asynchronous
2 message transfer to send the message to the second application system.

1 12. The method of claim 8 wherein the first application system sends a message to
2 the second application system containing the first application system's data set after each
3 modification of an attribute component of the first application system's data set.

1 13. The method of claim 8 wherein the message further comprises a total value a
2 total value that represents a sum of the attribute component data values in the data set as
3 locally stored in the first application system.

1 14. In a multiple-system environment wherein each of the multiple application
2 systems maintain a separate stored version of a data set and are each capable of modifying an

3 attribute of the data set, the attribute comprising multiple attribute components that are each
4 associated with a different one of the multiple application systems, and wherein each
5 attribute component has a data value and a change value, a computer readable medium or
6 propagated signal having embedded thereon executable instructions that when executed
7 cause a processor of a receiving application system in the multiple-system environment to:

8 receive, from a sending application system, a message containing a data set as locally
9 stored in the sending application system; and

10 for each attribute component of the data set, compare the attribute component's
11 change value as stored locally in receiving application system with the attribute component's
12 change value as contained in the received data set, and if the comparison indicates that the
13 version of the attribute component's data value as stored locally in the receiving application
14 system is less recent than the version of the attribute component's data value contained in the
15 received data set, replace the attribute component's data value stored locally in the receiving
16 application system with the attribute component's data value contained in the received data
17 set.

1 15. The computer readable medium or propagated signal of claim 14 wherein the
2 change value of the attribute component is a timestamp that indicates the time of the
3 modification to the attribute component's data value.

1 16. The computer readable medium or propagated signal of claim 14 wherein the
2 change value of the attribute component is a version number that is incremented after each
3 modification to the attribute component's data value.

1 17. The computer readable medium or propagated signal of claim 14 wherein the
2 sending application system sends messages to the receiving application system after each
3 modification of the sending application system's data set.

1 18. The computer readable medium or propagated signal of claim 17 wherein the
2 sending application system uses asynchronous message transfer to send the messages to the
3 receiving application system.

1 19. The computer readable medium or propagated signal of claim 14 wherein the
2 message further comprises a total value that represents a sum of the attribute component data
3 values in the data set as locally stored in the sending application system.

1 20. The computer readable medium or propagated signal of claim 14 wherein the
2 message received by the receiving application system from the sending application system
3 includes the attribute components associated with the receiving application system.